

glabrous inside, 5-nerved; lateral sepals 20-22 x 5-6 mm, ensiform to obliquely lanceolate, entire or slightly undulate at margin, with thick acumen, incurved and mucronate at apex, hairy outside (more on midrib), glabrous inside, 5-nerved. Petals 17-20 x 5-6 mm long, falcate-oblong, entire, recurved and mucronate at apex, minutely tubercled; midrib thick towards upper margin ending in a mucro, with 2 thin additional nerves below the midrib. Lip 17-20 x 10-12 mm, attached to base of the column, 3-lobed, ligulate; ligules 2, auricular at base of lip; a sword-like 10 mm long appendage partially adnate to the base of lip. Lateral lobes ovate-lanceolate, double-folded, fringed at margin towards apex. Midlobe up to 2.5 x 6 mm, 3-lobed; midlobule c. 1 mm long, triangular, acute; side lobules 1-1.2 x 1.5-2 mm, incurved and overlapping initially, later recurved revolute, oblong, obtuse. Column 10-18 mm long 2 appendages, broad, angular, carinate at base, grooved dorsally, narrowed towards apex, forked or

biclawed; appendages 2, attached to base of the column dorsally and embedded along the groove, dissimilar, the upper 8-9 mm long, linear-lanceolate, obtuse and the lower 13-14 mm long, linear, strap-like or spatulate, rounded or obtuse, enclosed by the biclawed apex of the column. Pollinia absent. (Figs. 1-9).

Holotype (Gopalan 93224, CAL) and isotypes (Gopalan 93224, MH-acc. no. 157415-24) were collected at Poonkulam (1120 m) in Agastyamalai, Tirunelveli Kattabomman District, Tamil Nadu, India on 24th April, 1990. Paratypes (Gopalan 96242, MH-acc. no. 157425-26) were also collected from the same locality on 3 April, 1991.

The name *Aenhenrya* honours Dr. A.N. Henry, Scientist 'SE', BSI, for his pioneering contributions to the flora/vegetation of Agastyamalai hills.

Thanks are due to Dr. V.J. Nair, Scientist-SD, BSI, for rendering the Latin translation and Dr. N.P. Balakrishnan, Joint Director, BSI, for facilities and helpful suggestions.

## GNATHIA BENGALENSIS, A NEW SPECIES OF GNATHIIDAE (CRUSTACEA: ISOPODA : GNATHIIDEA) FROM VISAKHAPATNAM COAST<sup>1</sup>

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(With two text-figures)

*Gnathia bengalensis*, a new species of the family Gnathiidae described from the rocky intertidal regions of Rishikonda and Gangavaram of Visakhapatnam Coast. Five specimens were collected from the sponge *Callyspongia fibrosa*. Similarities and differences with related species are illustrated.

### INTRODUCTION

Monod (1926) published a valuable work on the isopods belonging to the family Gnathiidae. The genus *Gnathia* was erected by Leach in 1815, the salient features being as follow. Cephalon of male large and quadrangular; that of female rather small and subtriangular. Pereon composed of 5 well developed segments, the other two being rudimentary; the first being fused with the head and

the last placed between the projecting lateral parts of the fifth segment. First pair of pereopods in males operculiform, composed of two articles and those of female subpediform being divided into 3-4 articles. Five pairs of ambulatory pereopods present. Pleon much narrower than pereon. Mandible present in males; they are more or less flattened and project beyond the anterior margin of cephalon. Maxillipeds without epigrowths and palp comprised of four articles.

In the present study, some specimens belonging to the genus *Gnathia* have been collected from the sponge *Callyspongia fibrosa*. As they differ significantly from the other related species,

<sup>1</sup>Accepted January 1993.

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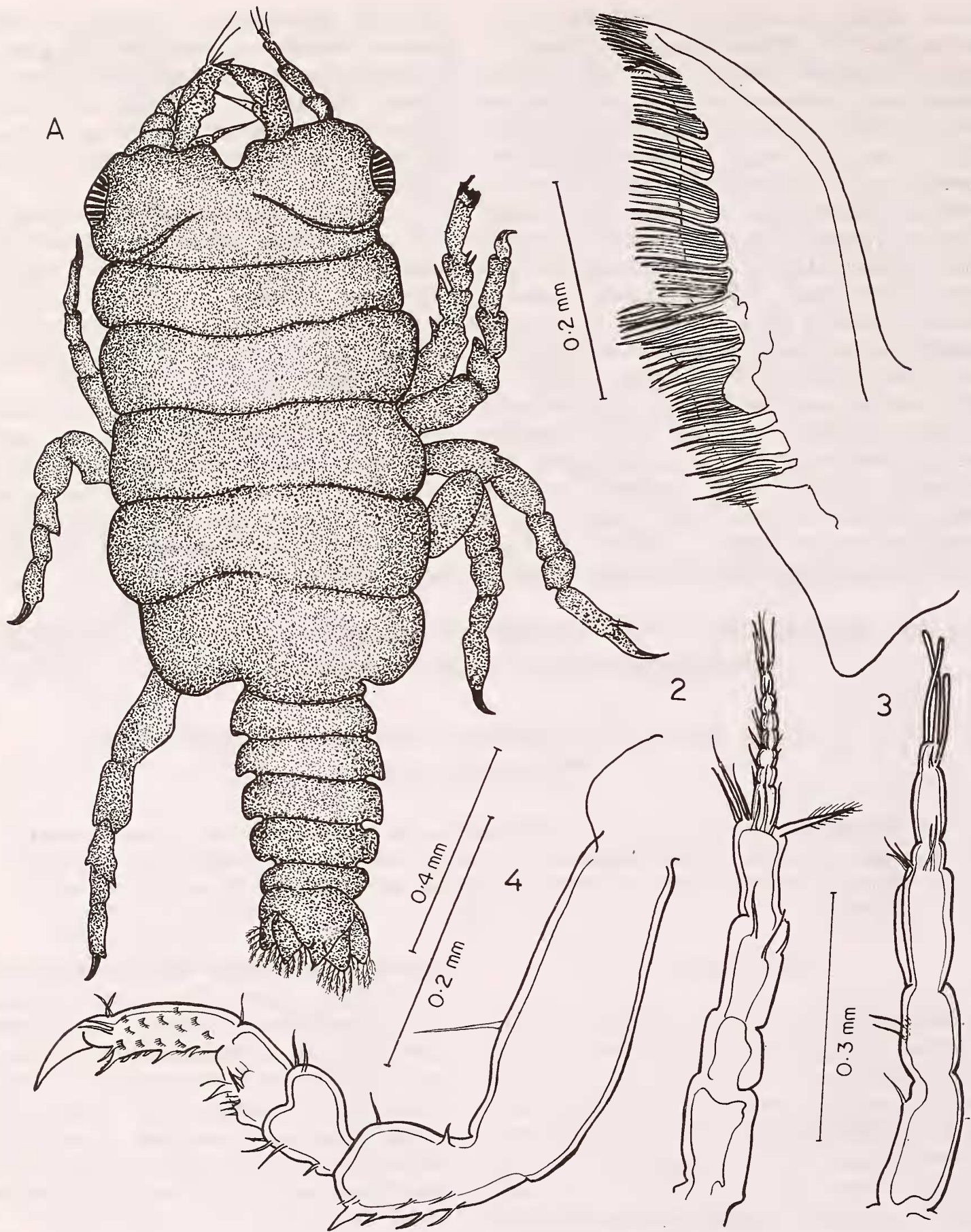


Fig. 1 : A. Male of *Gnathia bengalensis* sp. nov.  
1. Mandible; 2. Antenna; 3. Antennule; 4. Second pereopod.



Fig. 1:A. Male of *Gnathia bengalensis* sp. nov.  
5. Fourth pereopod; 6. Sixth pereopod; 7. Telson.

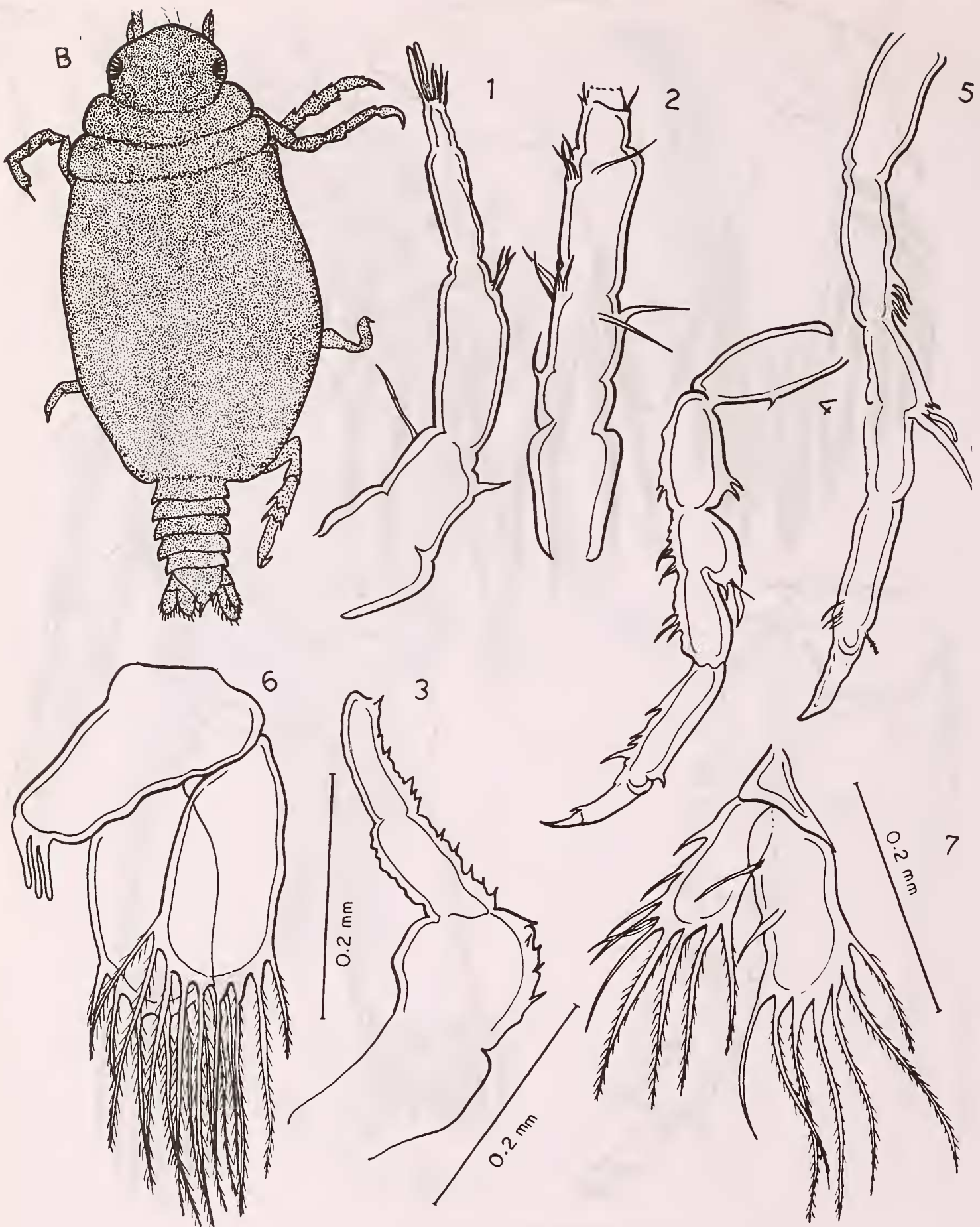


Fig. 2:B. Female of *Gnathia bengalensis* sp. nov.  
 1. Antennule; 2. Antenna; 3. First pereopod; 4. Second pereopod; 5. Third pereopod;  
 6. Sixth pereopod; 7. Uropod.

they are described as a new species *Gnathia bengalensis*.

***Gnathia bengalensis* sp. nov.**

**MALE:** Cephalon somewhat rectangular in shape. Eyes present in the mid-lateral region. Head is covered by hairs; there is a depression in the mid-anterior region. The antennule has a peduncle of 4 articles of which the basal and the third article are long and equal in length. The second article is about 3/4 the length of basal article and the fourth article is very small about 1/3rd the length of the second article. The flagellum bears 2 articles of which the penultimate article is elongated and the terminal slightly longer than 1/3rd the length of the penultimate article. Both are provided with aesthetascs; the antenna has a peduncle of 4 articles, of which the basal and the 4th article are equal in length and the third is slightly shorter than them, while the second is the shortest of all. The flagellum comprises of 7 articles and all of them are provided with setae. The mandibles are large and extend conspicuously beyond the anterior margin of cephalon. The outer margin is smooth and is bent regularly whereas the inner margin is fringed with setae. At the lower region, the inner margin is produced almost acutely, and medially it is produced only slightly.

Body is about two and half times longer than broad; the first pereonite, though fused with cephalon, can be located, the second to sixth pereonite are distinct and well defined. These segments are subequal in length, the sixth being longest; the seventh is short and narrow and can be distinguished just above the pleonites. The pereopods are ambulatory.

Pleon narrow and elongated; all pleonites equal in length, the exopods are roughly rectangular and smaller in size than the endopods, the exopods are fringed with nine plumose setae and the endopods with seven. Telson is triangular in shape and the apex has two small setae and above it two rows of setae; the uropods are longer than the telson and the endopod is longer than exopod; both are fringed with plumose setae.

Three males were collected.

**FEMALE:** The animal is oblong-ovate in shape, about twice as long as wide, cephalon smaller than

male, it is somewhat semicircular in shape; eyes small, round, composite and located at the post-lateral angles of head. Both pairs of Antenna as in males.

The first pereonite is almost inconspicuous, since it is short and narrow. Pereon gradually becomes wider from the second segment onwards. The second and third segments are distinct but the demarcations for fourth, fifth, and sixth segments are inconspicuous. The first pereopods are 4-segmented and the pereopods are more slender than in the male and the spines and setae are less in number. Pleon is also similar to that of the male. The pleopods are roughly oval in shape and are also fringed with plumose setae. The telson is smooth throughout its length. One female specimen was obtained in the collection.

**Larva:** Large, elongated, but the pereon is either distended or inflated, when inflated, the fourth, fifth and sixth segments are about as broad as the third pereonite. Cephalon roughly triangular in shape, if the mouthparts are included. The frontal margin is truncate, antennules and antennae more or less resemble that of male. The mouthparts project conspicuously beyond the cephalon, maxillae are present, the eyes very large and located on the lateral side of cephalon.

The first pereonite is rudimentary and is fused with the cephalon. The second and third pereonites are short and subequal. The fourth and fifth segments are united into one extremely long segment which are not wider, at its anterior extremity almost being as wide as the preceding segment, but at its posterior extremity being almost as narrow as the pleon. The seventh segment is similar to the pleonites. The pleonites are provided with pleopods. The telson is as in the male.

**Localities:** The specimens were collected from the rocky inter-tidal regions of Rishikonda and Gangavaram, Visakhapatnam.

**Material studied:** Three male, one female specimens and two larvae were collected from the sponge *Callyspongia fibrosa* along the rocky intertidal regions of Rishikonda and Gangavaram of Visakhapatnam coast. Holotype 1 male and paratypes 2 males + 1 female are kept in the Department of Zoology, Andhra University, Vishakhapatnam.

**Habitat:** The specimens were found in association with the sponge *Callyspongia fibrosa* as commensals.

#### DISCUSSION

The present species differs from *Gnathia coronadoensis* (Schultz 1969) in possessing eyes, the antero-frontal margin in *G. serrata* (Richardson 1905) is serrated, the eyes are visible from ventral view, and the ratio of length to breadth of cephalon differs from the present form. The cephalon is longer than wide in *G. triospathiona* (Schultz 1969) unlike the present form; frontal margin of *G. crenilatifrons* (Monod 1926) is crenulate and the cephalon is about as long as wide; the present form differs in these characters. Eyes in *G. multispinis* (Richardson 1905) are small and surrounded by long tubercles and the animal is

spiny in appearance unlike the present species. There is no rounded process on frontal margin of cephalon set above anterior border of cephalon in the present species as in *G. hirsuata* (Schultz 1969). In *G. cristata* (Schultz 1969), the frontal margin of cephalon is produced in the middle much beyond the antero-lateral angle. As the present species differs from the species mentioned in the structure of mandible and in the shape and size of cephalon, it is differentiated from the others as a new species and named *Gnathia bengalensis* sp. nov.

#### ACKNOWLEDGEMENTS

One of us (C.J.K) is grateful to the Council of Scientific and Industrial Research from financial assistance. We are thankful to the authorities of Andhra university for providing facilities.

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